Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A system for forming a cardiac muscle construct, comprising:

a substrate;

at least two anchors secured to the substrate in spaced relationship; and

cardiac cells provided on the substrate without ~~disposing the cells within~~ an exogenous scaffold material, wherein ~~at least~~ only some of the cells are in contact with the anchors,

the cardiac cells cultured *in vitro*, wherein the anchors are receptive to the cells and allow the cells to attach thereto and form a confluent monolayer between the anchors, the substrate configured to ~~and subsequently~~ permit the monolayer to detach from the substrate and self-organize to form a three-dimensional cardiac muscle construct.

2. (canceled)

3. (original) The system according to claim 1, wherein the cardiac cells include cardiac myocytes.

4. (original) The system according to claim 1, wherein the cardiac cells include fibroblasts.

5. (original) The system according to claim 1, wherein the cardiac muscle construct is spontaneously contractile.

6. (original) The system according to claim 1, wherein the cardiac muscle construct is responsive to electrical stimuli.

7. (original) The system according to claim 1, wherein the cardiac muscle construct is responsive to chemical stimuli.

8. (original) The system according to claim 1, wherein the cardiac muscle construct is resistant to fatigue.

9. (canceled)

10. (previously presented) The system according to claim 1, wherein the anchors include silk suture segments coated with cell adhesion molecules.

11. (original) The system according to claim 10, wherein the cell adhesion molecules include laminin.

12. (original) The system according to claim 1, wherein the substrate is coated with cell adhesion molecules.

13. (original) The system according to claim 12, wherein the cell adhesion molecules include laminin.

14. (original) The system according to claim 13, wherein the concentration of laminin is about 0.4 to 2.0 $\mu g/cm^2$.

15. (original) The system according to claim 1, wherein the cardiac muscle construct is substantially cylindrical.

16. (original) The system according to claim 1, further comprising skeletal muscle cells cultured in combination with the cardiac cells.

17. (currently amended) A method for forming a cardiac muscle construct, comprising:

providing a substrate;

securing at least two anchors to the substrate in spaced relationship;

providing cardiac cells on the substrate without ~~disposing the cells within~~ an exogenous scaffold material, wherein ~~at least~~ only some of the cells are in contact with the anchors; and

culturing the cardiac cells *in vitro*;

wherein the anchors are receptive to the cells and allow the cells to attach thereto to form a confluent monolayer between the anchors, the substrate configured to ~~and subsequently~~ permit the monolayer to detach from the substrate and self-organize to form a three-dimensional cardiac muscle construct.

18. (original) The method according to claim 17, wherein providing cardiac cells includes providing cardiac myocytes.

19. (original) The method according to claim 17, wherein providing cardiac cells includes providing fibroblasts.

20. (original) The method according to claim 17, further comprising eliciting a response of the cardiac muscle construct to electrical stimuli.

21. (currently amended) The ~~system~~ method according to claim 17, further comprising eliciting a response of the cardiac muscle construct to chemical stimuli.

22. (canceled)

23. (previously presented) The method according to claim 17, wherein the anchors include silk suture segments coated with cell adhesion molecules.

24. (original) The method according to claim 23, wherein the cell adhesion molecules include laminin.

25. (original) The method according to claim 17, further comprising coating the substrate with cell adhesion molecules.

26. (original) The method according to claim 25, wherein the cell adhesion molecules include laminin.

27. (original) The method according to claim 26, wherein the concentration of laminin is about 0.4 to 2.0 $\mu g/cm^2$.

28. (original) The method according to claim 17, further comprising measuring a functional property of the cardiac muscle construct and using the measured property as feedback to control the formation of the cardiac muscle construct.

29. (original) The method according to claim 17, further comprising culturing skeletal muscle cells in combination with the cardiac cells.

30. (previously presented) The method according to claim 17, further including implanting the cardiac muscle construct in a recipient.

31. (original) The method according to claim 17, further including wrapping an acellularized aorta with a layer of cardiac cells.

32. (currently amended) A cardiac muscle construct, comprising:

cardiac myocytes provided on a substrate without ~~disposing the myocytes within~~ an exogenous scaffold material, wherein ~~at least~~ only some of the myocytes are in contact with at least two anchors secured to the substrate in spaced relationship, the cardiac myocytes cultured *in vitro* wherein the anchors are receptive to the myocytes and allow the myocytes to

attach thereto to form a confluent monolayer between the anchors, the substrate configured to ~~and subsequently~~ permit the monolayer to detach from the substrate and self-organize to form a three-dimensional cardiac muscle construct.

33. (original) The cardiac muscle construct according to claim 32, further comprising fibroblasts provided in combination with the cardiac myocytes.

34. (original) The cardiac muscle construct according to claim 32, wherein the construct is spontaneously contractile.

35. (original) The cardiac muscle construct according to claim 32, wherein the construct is responsive to electrical stimuli.

36. (original) The cardiac muscle construct according to claim 32, wherein the construct is responsive to chemical stimuli.

37. (original) The cardiac muscle construct according to claim 32, wherein the construct is resistant to fatigue.

38. (original) The cardiac muscle construct according to claim 32, wherein the construct includes adherens junctions formed between the cardiac myocytes.

39. (original) The cardiac muscle construct according to claim 32, wherein the construct includes gap junctions between the cardiac myocytes.

40. (original) The cardiac muscle construct according to claim 32, wherein the cardiac muscle construct is substantially cylindrical.